

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 10, 12, 16, 17, 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2004/005095 A1 to Von Hayn et al. in view of US 6,209,968 to Bayens et al.

US 2006/0163941 A1 is relied upon as the English language equivalent to the WO document.

Re-claims 10, 12, 17 and 21, Von Hayn et al. teach a brake by wire system, comprising: a brake booster operable by a driver and an electronic regulating and control unit 4; the brake pedal is decoupled from the brake booster during brake by wire operation (see paragraph 54 lines 17-18); a master brake cylinder 11 is downstream of the brake booster; a pedal travel simulator 2

interacts with the brake pedal; sensor 3 senses brake pedal actuating travel; sensor 17 senses a travel of booster output member; sensor 18 measures a prevailing brake pressure in the system; electronic unit 4 contains control circuitry for controlling the travel of the output member by controlling a magnetic drive 8 of a booster valve, in response to a nominal value of the travel covered by the output member and actuating travel of the brake pedal. Von Hayn et al. further teach that the control unit can detect a malfunction in the brake circuit, see paragraph 39, and a response to this malfunction by transitioning from a brake-by-wire mode to a push-through mode (i.e. manual operation). However, Von Hayn et al. fail to teach a response to the malfunction that includes remaining in the brake-by-wire mode by performing a partial compensation of the extension of the travel covered by the output member.

Bayens et al. teach a vacuum booster having an electromagnetic valve that is controlled by a control unit, wherein a compensation procedure is carried out when an actual pressure prevailing in the brake circuit is less than a nominal pressure; this is interpreted as a brake circuit malfunction. The pressure values are converted into comparative current values used to control the electromagnetic valve, thereby moving the booster wall accordingly. Furthermore, Bayens et al. teach a correction value  $I_B$  added to the nominal value  $I_A$ . It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the system of Von Hayn et al. with a means of addressing the brake circuit malfunction as taught by Bayens et al., thereby ensuring the proper brake fluid pressure is applied to the wheel cylinder units during the brake-by-wire mode, thereby reducing the need for transitioning to the manual push-through mode.

Re-claims 16 and 24, Von Hayn et al. teach the use of a warning lamp, see paragraph 31.

***Allowable Subject Matter***

4. Claims 11, 13-15, 18-20, 22, 23, 25 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

5. Applicant's arguments filed April 19, 2011 have been fully considered but they are not persuasive. It is the opinion of the examiner that Bayens et al. teach a method for addressing a difference between a requested, or nominal value and an actual value, and that when applying this method of operation to the apparatus of Von Hayn et al. would enable the apparatus of Von Hayn et al. to remain in the brake-by-wire mode while addressing a fault. It is noted that Von Hayn et al. teach the apparatus comprising a vacuum booster, in which the method of Bayens et al. is applicable. With regards to the use of pressure information, it is the opinion of the examiner that pressure information is related to the travel information, since the travel distance of the operating member directly affects the pressure values. As such the rejection is maintained.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Wednesday-Friday from 6:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi, can be reached at 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-6584.

TJW  
June 16, 2011

/THOMAS J WILLIAMS/  
Primary Examiner, Art Unit 3657